

Clinical Edit Criteria Proposal

Drug/Drug Class: **Alinia® (Nitazoxanide) / antiparasitic/antimicrobial**

Prepared for: Missouri Medicaid
Prepared by: Heritage Information Systems, Inc.

☒ **New Criteria** ☐ **Revision of Existing Criteria**

Executive Summary

Purpose: The purpose of this monograph is to provide a review of new therapy to determine whether the reviewed drug should be made available on an open access basis, apply clinical edit or require prior authorization for use.

Dosage Forms & Manufacturer: 100mg/5ml Reconstituted Oral Suspension
Romark Laboratories

Summary of Findings: Alinia® is the first and only drug approved by FDA for treatment of *Cryptosporidium*, and the first new drug approved for *Giardia* in more than 40 years. *Cryptosporidiosis* is usually self-limiting in immunocompetent patients however a course of nitazoxanide may shorten the clinical course and this agent is preferred over paromomycin due to lesser toxicity. The agent of choice for *giardiasis* is metronidazole with nitazoxanide being an alternative treatment.

Status Recommendation: ☐ Prior Authorization (PA) Required ☐ Open Access
☒ Clinical Edit

Type of PA Criteria: ☐ Increased Risk of ADE ☐ Non-Preferred Agent
☐ Appropriate Indications ☐ PA Not Required



Purpose

The purpose of this monograph is to provide a review of new therapy to determine whether the reviewed drug should be made available on an open access basis, apply clinical edit or require prior authorization for use. While prescription expenditures are increasing at double-digit rates, payors are evaluating ways to control these costs by influencing prescriber behavior and guiding appropriate medication usage. This review will assist in the achievement of qualitative and economic goals related to health care resource utilization. Restricting the use of certain medications can reduce costs by requiring documentation of appropriate indications for use, and where appropriate, encourage the use of less expensive agents within a drug class.

Introduction ¹

Cryptosporidium and *Giardia*, the two most common waterborne protozoa in the United States, are common causes of persistent diarrhea among both children and adults. A study from the Centers for Disease Control and Prevention indicates that outbreaks of waterborne illnesses roughly doubled in the United States in a three-year period ending in 2000. Alinia® is the first and only drug approved by FDA for treatment of *Cryptosporidium*, and the first new drug approved for *Giardia* in more than 40 years.

Dosage Form(s) ²

100mg/5ml Reconstituted Oral Suspension

Manufacturer

Romark Laboratories

Indication(s) ^{2,3}

Alinia® is indicated for treatment of diarrhea in children caused by *Cryptosporidium parvum* and *Giardia lamblia*. It has orphan drug status for use in treatment of *cryptosporidiosis* in immunocompromised patients.

Clinical Efficacy ³⁻⁶ (mechanism of action/pharmacology, comparative efficacy)

Nitazoxanide is an antiparasitic agent with structural similarity to aspirin. The antiprotozoal activity of nitazoxanide appears related to interference with the pyruvate:ferredoxin oxidoreductase (POFR) enzyme-dependent electron transfer reaction which is required for anaerobic energy metabolism. Nitazoxanide and tizoxanide (active metabolite) are active in vitro against sporozoites and oocysts of *Cryptosporidium parvum* and trophozoites of *Giardia lamblia*. Metronidazole resistant *Helicobacter pylori* has been susceptible to nitazoxanide in vitro. *Cryptosporidiosis* is usually self-limiting in immunocompetent patients however a course of nitazoxanide may shorten the clinical course and this agent is preferred over paromomycin due to lesser toxicity. The agent of choice for giardiasis is metronidazole. In a double blind study nitazoxanide was compared to placebo in 50 adults and adolescents and 49 children with superiority over placebo shown by nitazoxanide in resolving the diarrhea caused by *Cryptosporidium parvum*. In a study of 99 patients Nitazoxanide and metronidazole were equally efficacious.



Adverse Effects ^{2,3}

Headache
Abdominal Pain
Diarrhea/vomiting < 2%
Hypotension (causality is unclear)

Drug Interactions

None are listed.

Dosage and Administration ^{2,3}

For diarrhea caused by *Cryptosporidium* and *Giardia lamblia*– Give with food. 12-47 months of age give 100mg twice a day for 3 days. 4-11 years of age is 200mg twice a day for 3 days.

Cost Comparison ^{7,8} (at commonly used dosages)

100mg/5mL 60mL Oral Suspension is \$60.00 AWP.
Metronidazole 250mg tablets \$0.43 Missouri MAC

Conclusion

Cryptosporidiosis is usually self-limiting in immunocompetent patients however a course of nitazoxanide may shorten the clinical course and this agent is preferred over paromomycin due to lesser toxicity. The agent of choice for giardiasis is metronidazole with nitazoxanide being an alternative treatment.

Recommendation(s)

It is recommended that clinical edits be in place for this drug.

Approval Criteria

- Diagnosis of Giardiasis or Cryptosporidiosis in the last 30 days
- Patients age between 1 and 11 years

Denial Criteria

- Inappropriate diagnosis
- Patients age falling outside of acceptable range

References

1. Press Release – Romark Laboratories, Tampa, FL December 2, 2002
2. Drug Facts and Comparisons, Facts and Comparisons (Wolters Kluwer Health, Inc.) St. Louis, MO 63146 (Edition Expires 12/2003)
3. Micromedex Healthcare Series Volume 116: Micromedex, Greenwood Village, CO (Edition Expires 6/2003)
4. Rossignol –F A, Ayoub A & Ayers MS: Treatment of diarrhea caused by *Cryptosporidium parvum*: a prospective randomized, double-blind, placebo-controlled study of nitazoxanide. J Infect Dis 2001a; 184:103-106



5. Rossignol –F A, Ayoub A & Ayers MS: Treatment of diarrhea caused by Giardia intestinalis and Entamoeba histolytica or E. Dispar: a randomized, double-blind, placebo-controlled study of nitazoxanide. J Infect Dis 2001b; 184:381-384.
6. Ortiz JJ, Ayoub A, Gargala G et al: Randomized clinical study of nitazoxanide compared to metronidazole in the treatment of symptomatic giardiasis in children from northern Peru. Aliment Pharmacol Ther 2001; 15:1409-1415.
7. AmerisourceBergen Online Catalog
8. Missouri Medicaid Pharmacy Program Web Site <http://www.heritage-info.com/mocaidrx/> (MAC)

Prepared by: Mark Roaseau, BS Pharmacy, MD
Date: May 28, 2003

